CITY OF MEDFORD
CONTRIBUTORY RETIREMENT SYSTEM

Actuarial Valuation Report

January 1, 2006

TABLE OF CONTENTS

P:\Actrl\Medford\Val06\[Medford06_Val.xls]Output

Report Summary:

Highlights	**January 1, 2003**	**January 1, 2006**
Contributions		
Funding Schedule FY 2007	$7,645,046	$7,645,046
Funding Schedule FY 2008	7,940,395	7,983,074
Funded Ratios		
GAS No. 25	64.7%	64.9%
Participants		
Actives	765	699
Retirees and Beneficiaries	518	520
Vested	0	0
Inactives	82	95
Disabled	114	114
Total	1,479	1,428
Payroll		
Payroll of Active Members	$31,112,227	$30,498,599
Average Payroll	40,670	43,632
Normal Cost		
Employer	2,257,535	2,494,159
Employee	2,393,734	2,420,031
Administrative Expenses	235,000	325,000
Total	4,886,269	5,239,190
Actuarial Accrued Liabilities		
Actives	91,181,114	93,445,268
Retirees, Beneficiaries, Disabilities and Inactives	88,829,971	105,687,047
Total	180,515,405	199,132,315
Actuarial Value of Assets	116,873,389	129,336,285
Unfunded Actuarial Accrued Liabilities	$63,642,016	$69,796,030

Introduction

This report presents the findings of an actuarial valuation as of January 1, 2006, of Medford Contributory Retirement System.

The actuarial valuation is based on:

- Provisions Chapter 32 of the Massachusetts General Laws, "M.G.L", as of January 1, 2006.
- Employee data provided by the Retirement Board
- Asset information reported to the Public Employee Retirement Administration Commission by the City of Medford Contributory Retirement System
- Actuarial assumptions approved by the Retirement Board

The valuation and appropriation forecast are prepared in accordance with Chapter 32 of the M.G.L. as of January 1, 2006.

The valuation and forecast do not account for:

- Any subsequent changes in the law
- Chapter 32 of the M.G.L., Section 3(8)(c) transfers between systems
- State-mandated benefits
- Cost-of-living increases granted to retired members between 1982 and 1997. The cost of these benefits has been assumed by the State under Proposition Two and One-Half.

Actuarial Experience

In performing the actuarial valuation, various assumptions are made regarding such factors as mortality, retirement, disability, and withdrawal rates as well as both payroll, salary increases, and investment returns. A comparison of the current valuation and the prior valuation is made to determine how closely actual experience corresponded to anticipated occurrences. This analysis of the system provides insight into the overall quality of the actuarial assumptions and helps explain any change in the annual appropriation.

During the last three years, the total unfunded actuarial accrued liability increased by 9.7% to $69,796,030. The increase is the result of net unfavorable actuarial experience during the preceding years. The market value of assets had returns of 6.57%, 6.67%, and 5.98% for 2003, 2004, and 2005, respectively. Due to an investment return less than the 7.50% assumption, the result is a loss of $4,405,192.

P:\Actrl\Medford\Val06\[Medford06_Val.xls]Output

Actuarial Costs and Liabilities:

Normal Costs

The normal cost is the sum of the individual normal costs determined for each member as if the assumptions underlying the cost determinations had been exactly realized. An individual normal cost represents that part of the cost of a member's future benefits which are assigned to the current year as if the costs are to remain level as a percentage of the member's pay. Benefits payable under all circumstances (i.e., retirement, death, disability, and terminations) are included in this calculation. Anticipated employee contributions to be made during the year are subtracted from the total normal cost to determine employer normal cost. The total normal cost is divided by total payroll to determine the normal cost as a percent of pay. The normal cost is shown in Table I.

Table I

	January 1, 2003	January 1, 2006
Superannuation	$3,211,764	$3,456,777
Termination	314,789	304,186
Death	208,784	232,430
Disability	915,932	920,797
Administrative Expenses	235,000	325,000
Total Normal Cost	4,886,269	5,239,190
% of Pay	15.7%	17.2%
Employee Contributions	2,393,734	2,420,031
% of Pay	7.7%	7.9%
Employer Normal Cost	$2,492,535	$2,819,159
% of Pay	8.0%	9.2%

P:\Actrl\Medford\Val06\[Medford06_Val.xls]Output

Present Value of Actuarial Accrued Liabilities

The actuarial accrued liabilities (AAL) represents today's value of all benefits earned by the actives and inactives. The AAL can be compared to the assets to determine the funded status of the Plan. The value of these earned benefits is shown in Table II below.

Table II

	January 1, 2003	January 1, 2006
Actives		
Superannuations	$84,761,203	$83,135,681
Termination	(1,049,722)	1,038,586
Death	2,023,610	2,767,053
Disability	5,446,023	6,503,948
Retirees and Inactives		
Retirees and Beneficiaries	61,283,243	73,882,201
Vested	0	0
Terminated (Refund)	504,320	686,239
Disabled	27,546,728	31,118,607
Total	$180,515,405	$199,132,315

Present Value of Future Benefits

The present value of future benefits represents today's value of all benefits earned by the inactive participants as well as all benefits earned and expected to be earned in the coming years by the active participants. The difference betwee the present value of future benefits and the present value of actuarial accrued liabilities is the value of benefits to be earned in the coming years. The value of the total expected benefits is shown in Table III.

Table III

	January 1, 2003	January 1, 2006
Actives		
Superannuation	$113,179,199	$112,981,528
Termination	1,891,127	2,201,024
Death	3,830,193	4,685,526
Disability	12,991,938	14,921,479
Retirees and Inactives		
Retirees and Beneficiaries	61,283,243	73,882,201
Vested	0	0
Terminated (Refund)	504,320	686,239
Disabled	27,546,728	31,118,607
Total	$221,226,748	$240,476,604

P:\Actrl\Medford\Val06\[Medford06_Val.xls]Output

Funded Status and Appropriations:

Market Value of Plan Assets

The trust fund composition on a market value basis is shown in Table IV.

Table IV

	January 1, 2003	January 1, 2006
Cash equivalents	$332,823	$307,250
Short term investments	1,717,420	2,839,307
Fixed income securities	43,834,622	42,972,061
Equities	37,168,499	49,318,161
International	6,492,314	20,765,907
Real Estate	1,223,643	269,645
Venture Capital	0	0
Other	9,751,756	15,867,382
Accounts receivable	673,771	50,510
Accounts payable	(140,422)	(250,828)
Accrued income	461,052	366,850
Total Market Value	$101,515,478	$132,506,245
Total Actuarial Value	$116,873,389	$129,336,285

P:\Actrl\Medford\Val06\[MEassets.xls]output

Actuarial Value of Assets

The actuarial value of assets is determined by projecting the actuarial value of assets as of the beginning of the prior plan year with the assumed rate of return during that year (7.5%) and accounting for deposits and disbursements with interest at the assumed rate of return. An adjustment is then applied to recognize the difference between the actual investment return and expected return over a five year period. This preliminary actuarial value is not allowed to differ from the market value of assets by more than 20%. The calculation of the actuarial value of assets as of January 1, 2006 is presented in Table V.

Table V

		January 1, 2006
(1)	Market value at January 1, 2005	$127,829,136
(2)	2005 Contributions	$11,035,453
(3)	2005 Benefit Payments	($14,026,166)
(4)	Net interest adjustment at 7.5% on (1), (2), and (3) to December 31, 2005	$9,475,033
(5)	Expected market value on January 1, 2006 (1) + (2) + (3) + (4)	$134,313,456
(6)	Actual market value on January 1, 2006	$132,506,245
(7)	2005 (Gain) / Loss	$1,807,211
(8)	80% of 2005 (Gain) / Loss	$1,445,769
(9)	2004 (Gain) / Loss	($5,152,083)
(10)	60% of 2004 (Gain) / Loss	($3,091,250)
(11)	2003 (Gain) / Loss	($11,840,818)
(12)	40% of 2003 (Gain) / Loss	($4,736,327)
(13)	2002 (Gain) / Loss	$16,059,241
(14)	20% of 2002 (Gain) / Loss	$3,211,848
(15)	Actuarial value on January 1, 2006, (6) + (8) + (10) + (12) + (14)	$129,336,285
(16)	but not less than 80% nor greater than 120% of (6)	$129,336,285
	Ratio of actuarial value to market value	97.61%

P:\Actrl\Medford\Val06\[Medford06_Val.xls]Output

Unfunded Actuarial Accrued Liabilities

Under the Entry Age Normal Actuarial Cost Method, the Actuarial Accrued Liability represents what the accumulated assets would have been as of the valuation date if:

- current plan provisions and assumptions had always been in effect,
- experience conformed exactly to assumptions, and
- the normal cost had been contributed each year since inception.

The actuarial value of the Fund's assets as of the end of the prior year are subtracted from the Actuarial Accrued Liability (AAL) to determine the Unfunded Actuarial Accrued Liability (UAAL) as of the valuation date. Over time, annual pension contributions will accumulate Plan assets equal to the AAL, and the UAAL will be eliminated. Thereafter, annual contributions equal to the normal cost will keep the Plan's assets and liabilities in balance. The UAAL is developed in Table VI.

Table VI

	January 1, 2003	January 1, 2006
Actuarial Accrued Liability	$180,515,405	$199,132,315
Actuarial Assets	116,873,389	129,336,285
Unfunded Actuarial Accrued Liability	$63,642,016	$69,796,030
Funded Status	64.7%	64.9%

Appropriations

The pension appropriation for the upcoming fiscal years have been calculated in accordance with the requirements set forth in Section 22D of Chapter 32 of the Massachusetts General Laws. These amounts were calculated to comply with the June 30, 2028, full funding mandate for all accrued liabilities. The pension appropriation is the sum of the:

- Employer normal cost,
- Increasing amortization of the prior unfunded actuarial accrued liability by June 30, 2026
  $ 69,055,398 over 20 years with 4.5% increasing payments
- Increasing amortization of the 2002 ERI Liability by June 30, 2026
  $ 77,860 over 20 years with 4.5% increasing payments
- Increasing amortization of the (gain)/loss liability by June 30, 2026
  $ 662,772 over 20 years with 4.5% increasing payments
- Interest adjustment for payments deposited on August 1.

The pension appropriation is shown in Table VII.

Table VII

	January 1, 2003	January 1, 2006
Normal cost	$2,492,535	$2,819,159
Amortization payment of the prior accrued liability	3,120,450	4,491,956
Amortization payment of 2002 ERI liability	4,784	5,027
Amortization payment of current (gains)/losses	707,386	42,790
Total cost	$6,325,155	$7,358,932
% of Pay	20.3%	24.1%
Fiscal 2007 cost	$7,645,046	$7,645,046
Fiscal 2008 cost	$7,940,395	$7,983,074

Appropriation Forecast

The following exhibit forecasts employer and employee contributions over the next 32 years under the adopted funding schedule.

Note that the forecast is based upon an "open group" method. This method assumes that sufficient employees will be hired each year to keep the number constant. The total payroll of the system is expected to increase 4.5% per year. The employee contribution rate is expected to increase to 10.5% by 2028 as members contributing base percentages 5%, 7%, and 8% are replaced by new members, whose base contribution is 9%. Payments are assumed to be made at the beginning of the year.

The employer total cost is expected to increase during the next 20 years until the unfunded liabilities are completely paid off, at which time only the normal cost will remain. The total cost represents 18.0% of payroll, increasing to 25.1% for FYE 2008, decreasing to 21.8% by the time the unfunded liabilities are fully paid off, leaving only a normal cost of 7.0% thereafter. The decrease in the cost as a percentage of payroll is a result of the increase in member deductions.

P:\Actrl\Medford\Val06\[Medford06_Val.xls]Approp. Results

Appropriation Forecast

Fiscal Year Ending	Payroll*	Employee Contribution	Employer Normal Cost with Interest	Amortization Payments with Interest	Employer Total Cost with Interest	Employer Total Cost % of Payroll	Funded Ratio %**
2007	$30,498,599	$2,420,031	$2,940,635	$4,704,411	$7,645,046	25.1	64.9
2008	$31,871,036	$2,567,862	$3,032,357	$4,950,717	$7,983,074	25.0	65.9
2009	$33,305,233	$2,724,098	$3,126,378	$5,173,499	$8,299,877	24.9	66.9
2010	$34,803,968	$2,889,194	$3,222,721	$5,406,307	$8,629,028	24.8	68.0
2011	$36,370,147	$3,063,634	$3,321,404	$5,649,590	$8,970,994	24.7	69.1
2012	$38,006,803	$3,247,922	$3,422,442	$5,903,822	$9,326,264	24.5	70.4
2013	$39,717,109	$3,442,592	$3,525,848	$6,169,494	$9,695,342	24.4	71.7
2014	$41,504,379	$3,648,205	$3,631,630	$6,447,121	$10,078,751	24.3	73.1
2015	$43,372,076	$3,865,353	$3,739,792	$6,737,242	$10,477,034	24.2	74.6
2016	$45,323,820	$4,094,655	$3,850,335	$7,040,418	$10,890,753	24.0	76.2
2017	$47,363,392	$4,336,768	$3,963,254	$7,357,236	$11,320,490	23.9	77.9
2018	$49,494,744	$4,592,380	$4,078,538	$7,688,312	$11,766,850	23.8	79.7
2019	$51,722,008	$4,862,214	$4,196,173	$8,034,286	$12,230,459	23.6	81.5
2020	$54,049,498	$5,147,034	$4,316,135	$8,395,829	$12,711,964	23.5	83.5
2021	$56,481,726	$5,447,642	$4,438,397	$8,773,641	$13,212,038	23.4	85.6
2022	$59,023,403	$5,764,882	$4,562,923	$9,168,455	$13,731,378	23.3	87.8
2023	$61,679,456	$6,099,642	$4,689,668	$9,581,036	$14,270,704	23.1	90.1
2024	$64,455,032	$6,452,856	$4,818,580	$9,375,816	$14,194,396	22.0	92.6
2025	$67,355,508	$6,825,508	$4,949,597	$9,797,728	$14,747,325	21.9	94.9
2026	$70,386,506	$7,218,632	$5,082,649	$10,238,626	$15,321,275	21.8	97.4
2027	$73,553,899	$7,633,315	$5,217,652	$0	$5,217,652	7.1	100.0
2028	$76,863,824	$8,070,702	$5,354,513	$0	$5,354,513	7.0	100.0
2029	$80,322,696	$8,433,883	$5,595,466	$0	$5,595,466	7.0	100.0
2030	$83,937,218	$8,813,408	$5,847,262	$0	$5,847,262	7.0	100.0
2031	$87,714,393	$9,210,011	$6,110,389	$0	$6,110,389	7.0	100.0
2032	$91,661,540	$9,624,462	$6,385,357	$0	$6,385,357	7.0	100.0
2033	$95,786,310	$10,057,563	$6,672,698	$0	$6,672,698	7.0	100.0
2034	$100,096,694	$10,510,153	$6,972,969	$0	$6,972,969	7.0	100.0
2035	$104,601,045	$10,983,110	$7,286,753	$0	$7,286,753	7.0	100.0
2036	$109,308,092	$11,477,350	$7,614,657	$0	$7,614,657	7.0	100.0
2037	$114,226,956	$11,993,830	$7,957,316	$0	$7,957,316	7.0	100.0
2038	$119,367,169	$12,533,553	$8,315,395	$0	$8,315,395	7.0	100.0

* Calendar basis

** As of Beginning of Fiscal Year

P:\Actrl\Medford\Val06\[Medford06_Val.xls]Output

GASB Statements No. 25 and No. 27

Effective for periods beginning after June 15, 1997, the Governmental Accounting Standards Board (GASB) requires the disclosure of pension related liabilities for public employer financial statements in accordance with Statements 25 and 27. These statements, which replace GASB Statement No. 5, must be adhered to by any public employee retirement system that follows Generally Accepted Accounting Principles (GAAP).

These disclosures are intended to establish a reporting framework that distinguishes between:

- current financial information about plan assets and financial activities,
- actuarially determined information from a long-term perspective,
- the funded status of the plan, and
- progress being made in accumulating sufficient assets to pay benefits when due.

Footnote disclosures required by GASB Statement No. 25 and 27 include a description of the plan, a summary of significant accounting policies, and information about contributions, legally required reserves, and investment concentrations. As a result of the oversight of the Public Employees Retirement Administration Commission (PERAC) and the conversion of unpaid contributions to pension related debt, the Net Pension Obligation (NPO) as required by Statement No. 27 will effectively always be equal to $0. The required disclosure information is shown in Table VIII.

Table VIII

		January 1, 2003	January 1, 2006
(1)	Actuarial Accrued Liability	$180,515,405	$199,132,315
(2)	Actuarial Value of Assets	116,873,389	129,336,285
(3)	Unfunded Actuarial Accrued Liability	63,642,016	69,796,030
(4)	Funded Ratio (2)/(1)	64.7%	64.9%
(5)	Covered Payroll	$31,112,227	$30,498,599
(6)	UAAL as a percentage of payroll: (3)/(5)	204.6%	228.8%
(7)	Annual Required Contribution (ARC)	$6,570,140	$7,645,046
(8)	Net Pension Obligation	$0	$0

P:\Actrl\Medford\Val06\[Medford06_Val.xls]PERAC Ann'l Stmt

PERAC Annual Statement
APPENDIX PAGE 3
ACTUARIAL VALUATION AND ASSUMPTIONS

The most recent actuarial valuation of the System was prepared by Buck Consultants as of January 1, 2006.

The normal cost for employees on that date was:	$2,420,031	7.9% of pay
The normal cost for the employer was:	2,494,159	8.2% of pay

The actuarial liability for active members was:	$93,445,268
The actuarial liability for retired members was:	105,687,047
Total actuarial accrued liability:	199,132,315
System assets as of that date:	129,336,285
Unfunded actuarial accrued liability:	$69,796,030

The ratio of system's assets to total actuarial liability was 64.9%

The principal actuarial assumptions used in the valuation are as follows:

Investment Return:	7.5%
Rate of Salary Increase:	4.5%

SCHEDULE OF FUNDING PROGRESS

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (b)	Unfunded Actuarial Accrued Liability (b-a)	Funded Ratio (a/b)	Covered Payroll (c)	UAAL as a percent of Covered Payroll (b-a)/c
01/01/06	$129,336,285	$199,132,315	$69,796,030	64.9%	$30,498,599	228.8%
01/01/03	116,873,389	180,515,405	63,642,016	64.7%	31,112,227	204.6%
01/01/01	110,396,557	161,786,782	51,390,225	68.2%	29,787,856	172.5%
01/01/98	84,451,719	138,357,249	53,905,530	61.0%	24,409,774	220.8%
01/01/96	63,223,198	111,671,213	48,448,015	56.6%	21,111,508	229.5%
01/01/95	54,680,640	109,664,599	54,983,959	49.9%	20,746,363	265.0%

Attach Copy of Current Approved Funding Schedule

EXHIBITS

P:\Actrl\Medford\Val06\[ACT1.XLS]Actives

Age/Service Distribution with Salary as of January 1, 2006

Attained Age	Average Salary <5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	Total
< 20	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
20-24	10	0	0	0	0	0	0	0	0	10
	24,314	0	0	0	0	0	0	0	0	24,314
25-29	26	3	0	0	0	0	0	0	0	29
	30,553	39,650	0	0	0	0	0	0	0	31,494
30-34	11	19	0	0	0	0	0	0	0	30
	40,365	45,420	0	0	0	0	0	0	0	43,567
35-39	12	29	12	4	0	0	0	0	0	57
	42,608	53,428	55,693	42,065	0	0	0	0	0	50,830
40-44	26	22	12	24	6	0	0	0	0	90
	28,411	47,103	49,786	58,839	59,095	0	0	0	0	45,990
45-49	29	27	10	21	19	2	0	0	0	108
	23,338	31,328	40,780	52,760	73,356	34,456	0	0	0	41,677
50-54	20	29	17	20	27	29	10	0	0	152
	27,232	33,363	35,347	50,820	65,304	58,861	56,415	0	0	47,130
55-59	13	22	12	15	10	19	9	9	0	109
	26,783	31,482	34,665	37,959	52,597	58,498	57,524	54,976	0	42,900
60-64	6	13	17	13	5	4	10	10	1	79
	29,255	37,930	27,736	33,723	34,998	57,566	68,055	67,095	44,172	42,778
65-69	2	6	5	3	0	2	0	2	2	22
	36,372	26,341	27,857	43,744	0	53,777	0	43,922	55,337	36,699
70+	0	0	1	4	2	4	1	1	0	13
	0	0	34,714	34,045	38,048	35,224	41,526	41,526	0	36,226
Total Employees	155	170	86	104	69	60	30	22	3	699
Average Salary	29,351	39,557	38,790	47,884	62,154	56,101	60,131	58,868	51,615	43,632

P:\Actrl\Medford\Val06\[RET1.XLS]Retirees

Retiree Distribution as of January 1, 2006

	Number of Employees			Total Payments		
Attained Age	Male	Female	Total	Male	Female	Total
< 20	0	0	0	0	0	0
20-24	0	0	0	0	0	0
25-29	0	0	0	0	0	0
30-34	0	0	0	0	0	0
35-39	0	0	0	0	0	0
40-44	0	0	0	0	0	0
45-49	1	0	1	9,976	0	9,976
50-54	2	1	3	54,436	18,605	73,041
55-59	15	4	19	594,482	49,920	644,402
60-64	13	17	30	462,033	199,106	661,139
65-69	29	34	63	976,301	513,488	1,489,789
70-74	46	40	86	1,223,511	577,258	1,800,769
75-79	60	57	117	1,501,589	630,708	2,132,297
80-84	43	64	107	875,262	646,237	1,521,499
85-89	20	47	67	324,414	402,441	726,855
90-94	2	21	23	41,641	188,905	230,546
95-99	0	4	4	0	31,892	31,892
Total	231	289	520	6,063,645	3,258,560	9,322,205
Average (Age/Payment)	74.7	78.4	76.7	26,250	11,275	17,927
Frequency Percent	44.5	55.5	100	65.1	34.9	100

P:\Actrl\Medford\Val06\[DIS1.XLS]Disabled

Disabled Retiree Distribution as of January 1, 2006

	Number of Employees			Total Payments		
Attained Age	Male	Female	Total	Male	Female	Total
< 20	0	0	0	0	0	0
20-24	0	0	0	0	0	0
25-29	0	0	0	0	0	0
30-34	0	0	0	0	0	0
35-39	0	0	0	0	0	0
40-44	1	0	1	31,478	0	31,478
45-49	4	0	4	142,075	0	142,075
50-54	6	0	6	200,594	0	200,594
55-59	23	1	24	842,036	21,731	863,767
60-64	18	1	19	468,181	14,799	482,980
65-69	19	1	20	633,523	12,878	646,401
70-74	13	0	13	295,452	0	295,452
75-79	15	1	16	422,396	18,291	440,687
80-84	7	0	7	153,834	0	153,834
85-89	1	0	1	13,511	0	13,511
90-94	3	0	3	45,000	0	45,000
95-99	0	0	0	0	0	0
Total	110	4	114	3,248,080	67,699	3,315,779
Average (Age/Payment)	66.7	65.5	66.6	29,528	16,925	29,086
Frequency Percent	96.5	3.5	100	98	2	100

P:\Actrl\Medford\Val06\[Medford06_Val.xls]Cash Flow

EXHIBIT 4 - CASHFLOW FORECAST:

The following is a 30 year forecast of benefit payments net of state reimbursable COLA payments, Contribution Income and Investment Returns.

Plan Year Ending	Benefit Payments	Employee Contributions	Employer Contributions	Investment Returns	Net change in plan assets
2006	$13,145,856	$2,420,031	$7,645,046	$9,283,118	$6,202,338
2007	$13,649,641	2,567,862	7,983,074	$9,736,757	6,638,052
2008	$14,227,056	2,724,098	8,299,877	$10,218,158	7,015,077
2009	$14,699,711	2,889,194	8,629,028	$10,731,990	7,550,500
2010	$15,232,212	3,063,634	8,970,994	$11,284,086	8,086,503
2011	$15,724,668	3,247,922	9,326,264	$11,878,187	8,727,705
2012	$16,281,999	3,442,592	9,695,342	$12,518,338	9,374,273
2013	$16,886,864	3,648,205	10,078,751	$13,205,600	10,045,692
2014	$17,483,435	3,865,353	10,477,034	$13,943,913	10,802,865
2015	$18,100,079	4,094,655	10,890,753	$14,738,686	11,624,014
2016	$18,738,472	4,336,768	11,320,490	$15,594,678	12,513,464
2017	$19,399,382	4,592,380	11,766,850	$16,517,009	13,476,857
2018	$20,083,601	4,862,214	12,230,459	$17,511,220	14,520,291
2019	$20,791,954	5,147,034	12,711,964	$18,583,311	15,650,355
2020	$21,525,290	5,447,642	13,212,038	$19,739,777	16,874,168
2021	$22,284,491	5,764,882	13,731,378	$20,987,647	18,199,416
2022	$23,070,469	6,099,642	14,270,704	$22,334,525	19,634,402
2023	$23,884,169	6,452,856	14,194,396	$23,769,174	20,532,258
2024	$24,726,568	6,825,508	14,747,325	$25,289,368	22,135,633
2025	$25,598,678	7,218,632	15,321,275	$26,929,388	23,870,616
2026	$26,501,548	7,633,315	5,217,652	$28,371,944	14,721,363
2027	$27,436,263	8,070,702	5,354,513	$29,440,703	15,429,655
2028	$28,403,945	8,433,883	5,595,466	$30,557,282	16,182,686
2029	$29,405,757	8,813,408	5,847,262	$31,728,856	16,983,768
2030	$30,442,904	9,210,011	6,110,389	$32,958,974	17,836,470
2031	$31,516,631	9,624,462	6,385,357	$34,251,452	18,744,640
2032	$32,628,228	10,057,563	6,672,698	$35,610,390	19,712,423
2033	$33,779,032	10,510,153	6,972,969	$37,040,200	20,744,290
2034	$34,970,425	10,983,110	7,286,753	$38,545,624	21,845,062
2035	$36,144,159	11,477,350	7,614,657	$40,133,962	23,081,810

amounts in thousands

EXHIBIT 5 – SUMMARY OF PLAN PROVISIONS:

This summary is prepared in accordance with Chapter 32 as of January 1, 2006, and does not take into account any subsequent changes.

1. Administration

Each of the 107 contributory retirement systems for public employees of the Commonwealth of Massachusetts are guided by the applicable provisions of Chapter 32 of the Massachusetts General Laws and other applicable statutes. Although these boards operate semi-independently, there is a uniform set of rules governing benefits, eligibility, contributions, financing, and accounting.

2. Participation

Participation is mandatory for all full-time employees whose employment commences prior to age 65. Eligibility with respect to part-time, professional, temporary, or intermittent employment is governed by the local board. Membership is optional for certain elected officials, State officials appointed by the Governor, and certain hospital interns.

There are four classes of membership as follows:

(i) Group 1: Most general employees in State and local government

(ii) Group 2: Certain specified hazardous duty positions

(iii) Group 3: State police officers and inspectors

(iv) Group 4: Local police officers, firefighters, and designated employees of the municipal light department.

For members in more than one group, participation will be proportional.

3. Salary

Salary is defined as gross regular compensation. Salary does not include bonuses, overtime, severance pay, unused sick leave credit, or other similar compensation.

4. Member Contributions

Member contributions vary depending upon date hired as follows:

Date of Hire	**Member Contribution Rate**
Prior to 1975	5.0% of Salary
1975 to 1983	7.0% of Salary
1984 to 1996	8.0% of Salary
1996 and Later plus	9.0% of Salary
1979 and Later	2.0% of Salary in excess of $30,000

5. Average Salary

Average salary is used to determine a participant's benefit. It is defined as the average salary during the three consecutive-year period that produces the highest average. (Alternatively, if a greater amount results, it is the average rate of salary earned during the period or periods, whether or not consecutive, that constitutes the last three years preceding retirement.)

6. Creditable Service

In general, creditable service is awarded during the period in which a member contributes to the retirement system.

7. <u>Service Retirement</u>

a. Eligibility:

For an employee to be eligible for service retirement (also referred to as superannuation), one of the following conditions must be met:

(i) completion of 20 years of service

(ii) for an employee hired prior to January 1, 1978, attainment of age 55 as an active member

(iii) for an employee hired on or after January 1, 1978, attainment of age 55 as an active member and completion of ten years of service

b. Benefit Amount:

The retirement allowance is determined as a product of the participant's Benefit Rate times Average Salary times Creditable Service, where Benefit Rate is determined from the following table:

Age at Retirement	Percentage of Average Salary Group 1	Group 2	Group 4
65 or Over	.025	.025	.025
64	.024	.025	.025
63	.023	.025	.025
62	.022	.025	.025
61	.021	.025	.025
60	.020	.025	.025
59	.019	.024	.025
58	.018	.023	.025
57	.017	.022	.025
56	.016	.021	.025
55	.015	.020	.025
54	.014	.014	.024
53	.013	.013	.023
52	.012	.012	.022
51	.011	.011	.021
50	.010	.010	.020
49	.009	.009	.019
48	.008	.008	.018
47	.007	.007	.017
46	.006	.006	.016
45	.005	.005	.015
44	.004	.004	.004
43	.003	.003	.003
42	.002	.002	.002
41	.001	.001	.001

8. Deferred Vested Retirement

a. Eligibility:

A participant who has completed ten or more years of creditable service is eligible for a deferred vested retirement benefit. If termination is involuntary, the participant is vested after six years.

b. Benefit Amount:

The participant's accrued benefit is payable commencing at age 55, or may be deferred until later at the employee's option.

c. Refund of Contributions:

In lieu of the deferred pension benefit, a member may elect to receive a refund of their accumulated contributions. Members with ten or more years of service are entitled to 100% of the credited interest on their contributions. Members with five to ten years of service are entitled to 50% of the credited interest on their contributions. No credited interest is provided for members with less than five years of service.

9. Accidental Disability

a. Eligibility:

Participants are eligible for an accidental disability benefit, regardless of service or age, if they become permanently and totally incapacitated for further duty as a result of personal injury sustained while in the performance of duties.

b. Benefit Amount:

The accidental disability amount is 72% of annual salary plus $450 per year for each child plus an additional annuity based upon accumulated Member Contributions with credited interest.

10. Ordinary Disability

a. Eligibility:

An ordinary disability occurs when a member becomes permanently and totally disabled due to sickness or injury that is not job related. In order to be eligible for an ordinary disability benefit, a member must have ten years of service (and be less than age 55).

b. Benefit Amount:

The ordinary disability amount is equal to the accrued retirement benefit as if the member were age 55. If the member was a veteran, the benefit is 50% of the member's final rate of Salary during the preceding 12 months, plus an annuity based upon accumulated Member Contributions plus credited interest. If the participant is over age 55, he will receive not less than the superannuation allowance to which he is entitled.

11. Survivor Benefits

a. Occupational Death:

The survivors of a member who dies due to an occupational injury will be entitled to a lump sum return of contributions plus a pension benefit equal to 72% of the participant's annual Salary.

b. Non-Occupational Death:

Upon the death of a member other than due to an occupational injury, the designated beneficiary will be entitled to a retirement benefit as if Option C had been elected with a minimum of $250 per month to the surviving spouse, plus $120 for the first child, plus $90 for each additional child. If no beneficiary is designated and if the employee worked two years, and is married at least one year, the spouse may elect benefits. If there is no designated beneficiary or surviving spouse, then member contributions are returned. If there are dependent children but no surviving spouse, they may elect minimum survivor benefits of $250 per month plus $120 for the first child and $90 for each additional child.

c. Refund of Contributions:

Upon the death of a member not entitled to survivor benefits, the beneficiary is entitled to a refund of all member contributions with interest.

12. Cost-of-Living Increases

In accordance with the adoption of Chapter 17 of the Acts of 1997, the granting of a cost-of-living adjustment will be determined by an annual vote by the Retirement Board. The amount of increase will be based upon the Consumer Price Index, limited to a maximum of 3.0%, beginning on July 1. All retirees, disabled retirees, and beneficiaries who have been receiving benefits payments for at least one year as of July 1 are eligible for the adjustment. The maximum amount of pension benefit subject to a COLA is $12,000. All COLAs granted to members after 1981 and prior to July 1, 1998 are deemed to be an obligation of the State and are not the liability of the Retirement System.

13. Postretirement Death Benefits

Any benefits following the death of a member after retirement are based upon the form of benefit the participant elected at the time of retirement. There are three available forms as follows:

(i) Option A – Life annuity

(ii) Option B – Life annuity with death benefit equal to excess of member contributions plus credited interest to retirement over annuity benefit paid to member

(iii) Option C – Life annuity with 66-2/3% of benefit continued after death of member to designated joint annuitant

EXHIBIT 6 – ACTUARIAL METHODS AND ASSUMPTIONS:

The actuarial cost method, factors, and assumptions used in determining cost estimates are presented below.

1. **Member Data**

   The member data used in the determination of cost estimates consist of pertinent information with respect to the active, inactive, retired, and disabled members of the employer as supplied by the employer to the actuary.

2. **Valuation Date**

   January 1, 2006.

3. **Actuarial Cost Method**

   The costs of the Plan have been determined in accordance with the individual entry age normal actuarial cost method.

4. **Rate of Investment Return**

   It is assumed that the assets of the fund will accumulate at a compound annual rate of 7.50% per annum.

5. **Salary Scale**

   It is assumed that salaries including longevity will increase at a rate of 4.5% per year.

6. **Cost-of-Living Increases**

   Cost-of-living increases have been assumed to be 3.0% of the lesser of the pension amount and $12,000 per year.

7. **Value of Investments**

   Assets held by the fund are valued at market value as reported by the Public Employees'

Retirement Administration Commission (PERAC). The actuarial value of assets is set equal to the market value.

8. Annual Rate of Withdrawal Prior to Retirement

Based on an analysis of experience, the assumed annual rates of withdrawal may best be illustrated by the following rates at the following ages:

Service	General Employees	Police and Fire Employees
0	0.1500	0.0150
10	0.0540	0.0150
20	0.0200	0.0000
30	0.0000	0.0000

9. Annual Rate of Mortality

It is assumed that both pre-retirement and post retirement mortality are represented by the RP-2000 Mortality Table for males and females. Mortality for disabled members is represented by the RP-2000 Mortality Table set forward two years for all disabled members.

10. Service Retirement

Based on an analysis of experience, the assumed annual retirement rates are illustrated at the following ages:

Age	Male General Employees	Female General Employees	Male and Female Police and Fire Employees
50	0.0100	0.0150	0.02000
51	0.0100	0.0150	0.02000
52	0.0100	0.0200	0.02000
53	0.0100	0.0250	0.05000
54	0.0200	0.0250	0.07500
55	0.0200	0.0550	0.15000
56	0.0250	0.0650	0.10000
57	0.0250	0.0650	0.10000
58	0.0500	0.0650	0.10000
59	0.0650	0.0650	0.15000
60	0.1200	0.0500	0.20000
61	0.2000	0.1300	0.20000
62	0.3000	0.1500	0.25000
63	0.2500	0.1250	0.25000
64	0.2200	0.1800	0.30000
65	0.4000	0.1500	1.00000
66	0.2500	0.2000	1.00000
67	0.2500	0.2000	1.00000
68	0.3000	0.2500	1.00000
69	0.3000	0.2000	1.00000
70	1.0000	1.0000	1.00000

11. Annual Rate of Disability Prior to Retirement

Based on an analysis of experience, the assumed annual rates of disability may best be illustrated by the following probabilities at the following ages:

Attained Age	General Employees	Police and Fire Employees
20	0.0001	0.0001
30	0.0003	0.0003
40	0.0010	0.0030
50	0.0019	0.0125

In addition, it is assumed for the general employees that 45% of all disabilities are ordinary (55% are service connected). For police and fire employees, 10% of all disabilities are assumed to be ordinary (90% are service connected).

12. Family Composition

It is assumed that 80% of all members will be survived by a spouse and that females (males) are three years younger (older) than members.

13. Administrative Expenses

The normal cost is increased by an amount equal to the anticipated administrative expenses for the upcoming fiscal year. The amount for fiscal year 2006 is $325,000 and is anticipated to increase at 4.5% per year.

EXHIBIT 7 – GLOSSARY OF TERMS:

This glossary summarizes the technical terms contained in this report.

1. Actuarial Accrued Liability

That portion of the Actuarial Present Value of plan benefits that is not provided for by future employer Normal Costs or employee contributions.

2. Actuarial Assumptions

Assumptions as to the occurrence of future events affecting the Retirement System such as:

- Rates of investment returns
- Increases in a member's salary
- Inflation
- The probability of mortality, turnover, disablement
- Retirement at each age and other relevant items

3. Actuarial Cost Method

A procedure for allocating the Actuarial Present Value of pension plan benefits between Normal Cost and Actuarial Accrued Liability.

4. Actuarial Present Value

The single sum amount required at the valuation date that is required to provide for anticipated future events based upon the terms of the plan and the Actuarial Assumptions.

5. Forecast

A projection of future benefit payments or contribution requirements based upon the terms of the plan, the current asset amounts, the Actuarial Assumptions, and additional assumptions as to the replacement of terminating employees with new employees.

6. Normal Cost

That portion of the Actuarial Present Value of future benefits that is assigned to the current year.

7. Unfunded Actuarial Accrued Liability

That portion of the Actuarial Accrued Liability that is not provided for by current actuarial value of assets.

8. Valuation Method

The method used to divide the cost of future benefits among the Actuarial Accrued Liability, the current year's Normal Costs, and future years' Normal Costs. The resulting current funding requirement is then determined as the current year's Normal Cost plus the payment necessary to amortize the Unfunded Actuarial Liability.

9. Vested Liability

That portion of the Actuarial Present Value of Accrued Benefits that a member would be entitled to if the member terminated employment with the employer as of the valuation date.

CERTIFICATION:

This report fairly represents the actuarial position of the City of Medford Retirement System contributing as of January 1, 2006, in accordance with generally accepted actuarial principles applied consistently with the preceding valuation. In our opinion, the actuarial assumptions used to compute actuarial accrued liability and normal cost are reasonably related to plan experience and to reasonable expectations, and represents our best estimate of anticipated plan experience.

Buck Consultants, LLC

Daniel W. Sherman, ASA, MAAA
Enrolled Actuary No. 05-4086

September 2006

BREAKOUTS

P:\Actrl\Medford\Val06\[Medford06_Val.xls]Actuarybreak

Breakouts

	Total	All Others	Housing
(1) Participants			
(a) Actives	699	678	21
(b) Inactives	95	90	5
(c) Retirees	520	501	19
(d) Disabled Retirees	114	109	5
(e) Total	1,428	1,378	50
(2) Payroll of Active Participants	$30,498,599	$29,499,240	$999,359
(3) Percentage of Payroll	100.00%	96.72%	3.28%
(4) Appropriation			
(a) ERI	5,027	0	5,027
(b) Remaining Amortizations*	4,534,746	4,386,155	148,592
(c) Employer Normal Cost*	2,494,159	2,412,432	81,727
(d) Administrative Expenses*	325,000	314,351	10,649
(e) Total	7,358,932	7,112,937	245,995
(5) Fiscal 2007 Cost	$7,645,046	$7,417,768	$227,278
(6) Fiscal 2008 Cost	$7,983,074	$7,716,215	$266,859
(7) Percentage of Total Cost	100.00%	96.66%	3.34%

* Allocation is based on the ratio of division payroll to the total payroll.